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| EXAMINER | |
|---|---|
| MAKI, STEVEN D | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/600,648 | BRIVIO ET AL. | |
| | Examiner | Art Unit | |
| | Steven D. Maki | 1733 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *33-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2) Claims 33-53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 33, 40 and 47, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the omission of the subject matter of an annular abutting shoulder of the stud contacting the seat such that "the retaining means is separate from the plurality of studs when the mould is closed". The original specification requires the use of the abutting shoulder such that, for example, tip 303 never comes into contact with magnet 205. The specification therefore fails to contemplate omitting the above noted subject matter.

3) Claims 33-53 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for using an annular abutting shoulder of the stud which contacts the seat such that "the retaining means is separate from the plurality of studs when the mould is closed", does not reasonably provide enablement for "the retaining means is separate from the plurality of studs when the mould is closed". The

specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The original specification requires the use of the abutting shoulder such that, for example, tip 303 never comes into contact with magnet 205, but fails to teach how to obtain complete separation when the mold is closed without using the annular abutting shoulder.

4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5) **Claims 33-34, 40-41 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crooker (US 2,770,013) in view of Breen (US 3,504,414) and optionally Galli et al (US 5234326).**

Crooker teaches a method of making a tire comprising:

- providing a mold 10 which is made of two sections 11 and 12 wherein the mold comprises stud holders such as stud holders 46 (figure 8) or stud holders 42 (figure 6),
- inserting studs into seats of the stud holders,
- retaining the studs in the seats using magnets 49 (figure 8) or leaf spring elements (figure 6),
- providing (producing) a tire having an uncured tread,
- inserting the tire in the mold,

- vulcanizing the tire to form a vulcanized tire having the studs,
- removing the vulcanized tire from the mold wherein the studs are perpendicular to the tread surface as indicated by figure 1.

As to partially projecting, see column 1 lines 20-21 and figure 1. As to "substantially perpendicular", see figure 1 of Crooker which illustrates the studs as being perpendicular to the tread surface. Crooker states: "... hold traction enhancing studs in position during a tire molding operation, said studs being readily removable from the holders when the finished tire is taken out of the mold and the holding action of said holders not being sufficiently strong to pull the studs from the finished tire as the tire is removed from the mold." (col. 1 lines 30-36). Also, see col. 3 lines 15-17 of Crooker. As to closing and opening the mold, one of ordinary skill in the art would readily understand that the mold of Crooker must be closed so that the described vulcanization can occur and must be opened in order to remove the tire. The studs must maintain a substantially perpendicular arrangement as claimed since Crooker teaches that the studs having the large flat head 26 are held in position during curing and shows the stud shank 45 being perpendicular to the tread surface in figure 1.

With respect to "wherein the mould includes means for retaining the plurality of studs in the seats, and the retaining means is separated from the plurality of studs when the mold is closed", support for this subject matter is found in the original disclosure at least at page 18 lines 8-9 and page 20 lines 21-29. The "means for retaining" reads on magnets or vacuum means.

As to claims 33, 40 and 47, it would have been obvious an obvious alternative to one of ordinary skill in the art to use vacuum means as the retaining means in Cooker since (1) Cooker suggests using various means such as magnet means (figure 8) or leaf spring elements (figure 6) to hold the studs in position in the mold and (2) Breen, also directed to the tire stud art, teaches retaining studs in position using suction means, magnetic means or spring friction means wherein when suction means are used, the stud 14, 16 is "separated" from the retaining means (fan 42). See figure 6 and col. 3 lines 32-44 of Breen. Hence, the combination of Crooker and Breen suggest forming a passage in the bottom of the seat for the stud in Crooker's mold so that a vacuum can be applied to retain the stud in the seat wherein the tip of the stud is separated from the bottom of the seat through which the passage is formed. As can be seen in figure 6 of Breen, the passage 44 opens at the bottom of the seat including socket 26. As can be seen in figure 4 of Breen, the tip of the stud is separated from the bottom of the seat including socket 26.

As to the limitations of "a predefined degree of clearance exists between lateral portions of each of the plurality of metal studs and one of the respective seats" (claim 33), "the plurality of metal studs are not subjected to any flexural stress" (claim 40) and "the plurality of metal studs are not subjected to traction caused by friction against the seats" (claim 47), each of these limitations are satisfied by Crooker. As can be seen from FIGURE 6, a clearance exists between lateral portions of the stud and the leaf springs of the seat for the stud. The leaf spring element 44 does not contact the stud along its entire length. In FIGURE 8, a clearance must exist in the magnet embodiment

(figure 8) since the Crooker teaches that the magnet is the *sole* holding means for the stud. See col. 4 line 44-47 of Crooker. Since the walls of the seat do not hold the stud in the magnet embodiment, a clearance exists between the stud and the seat; and the studs are therefore not subjected to any flexural stress (claim 40) or traction (clam 41). Claims 33, 40 and 47 fail to require a clearance of 0.2 mm as described in the specification at page 18. In any event: As to claims 33, 40 and 47, it would have been obvious to one of ordinary skill in the art to provide the seats of Crooker's mold wherein "a predefined degree of clearance exists between lateral portions of each of the plurality of metal studs and one of the respective seats" (claim 33), "the plurality of metal studs are not subjected to any flexural stress" (claim 40) and "the plurality of metal studs are not subjected to traction caused by friction against the seats" (claim 47) in view of (1) Crooker's teaching to use the magnet as the *sole* holding means for releasably holding the stud (frictional engagement with the side of the seat thereby not being necessary) and optionally (2) Galli et al's suggestion to form clearances of less than 0.08 mm in a tire mold, which can be opened and closed, so that trapped air can escape to thereby prevent formation of bubbles / burrs. Galli et al motivates using clearances to prevent trapped air.

As to opening and closing the mold, it would have been obvious to one of ordinary skill in the art to *close* the mold of Crooker after inserting the tire in the mold and *open* the mold such that "the predetermined degree of clearance is such that during the step of opening the mold, the studs maintain a substantially perpendicular arrangement" in view of Crooker's teaching to (a) vulcanize the tire in the mold *and*

hold studs during vulcanization of a tire in the mold so that the studs are perpendicular to the external surface of the vulcanized tire and (b) take the finished tire out of the mold. Also, the optional Galli et al suggests opening and closing a mold. Crooker et al's studs are shown in figure 1 as being "substantially perpendicular" with respect to the surface of the tread. The relatively large flat head 26 of the stud embedded in the cured rubber of the tire necessarily maintains this arrangement (col. 2 lines 68-72, col. 3 lines 1-4).

As to claims 34, 41 and 48, note Crooker's teaching to use magnets 49.

6) **Claims 35-37, 42-44 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crooker in view of Breen and optionally Galli et al as applied above and further in view of Eger (US 2121956).**

As to claims 35-37, 42-44 and 49-51, it would have been obvious to provide the metal studs (antiskid inserts) of Crooker with the claimed limitations in view of Eger's teaching to plate an metal antiskid insert for a tire tread with bronze (an alloy of copper and tin) and a rubber cement so as to obtain a proper bond between the metal antiskid insert and the rubber of the tread.

7) **Claims 35-39, 42-46 and 49-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crooker in view of Breen and optionally Galli et al as applied above and further in view of Torrey (US 2808621).**

As to claims 35-39, 42-46 and 49-53, it would have been obvious to use brass (an alloy of copper and zinc) for Crooker's studs (antiskid inserts) as claimed in view of Torrey's suggestion to brass plate springs (anti-skid means for a tire tread) to insure a

maximum bond with the rubber of the tire (col. 3 lines 1-3). The limitation of the brass coating layer being provided by electrolytic plating or electro-plating would have been obvious in view of (1) Torrey's suggestion to brass plate springs (anti-skid means for a tire tread) to insure a maximum bond with the rubber of the tire (col. 3 lines 1-3) and (2) it is taken as well known / conventional per se to form a coating of brass on a substrate by electrolytic plating or electro-plating.

**Allowable Subject Matter**

8) **Claims 34, 41 and 48 would be allowable if (1) rewritten to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action and to include all of the limitations of the base claim and any intervening claims and (2) appropriately amended to recite --wherein an abutting shoulder of each stud engages the internal surface of the mold such that the stud never comes into contact with the magnet--.**

Support for the above subject matter is found in the original disclosure at page 17 lines 15-29. Crooker's stud contacts magnet 49 instead of never contacting magnet 49.

Remarks

9) Applicant's arguments with respect to claims 33-53 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 3-15-07 have been fully considered but they are not persuasive.

Applicant argues that Breen discloses a tool for inserting tire studs and does not show a mold. This argument is not persuasive because (1) Crooker and Breen are in

the same field of endeavor of forming a studded tire, (2) Crooker and Breen retain a stud in a socket of a seat, (3) Crooker suggests using various retaining means in the mold and (4) Breen recommends using vacuum means as the retaining means for the stud.

Applicant argues that passage 44 is in direct contact with socket 26 which holds the stud. More properly, both fan 42 and the opening of passage 44 in the bottom of the socket of the seat are separated from the tip of the stud.

10) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
June 24, 2007

Steven D. Maki 6-25-07
STEVEN D. MAKI
PRIMARY EXAMINER